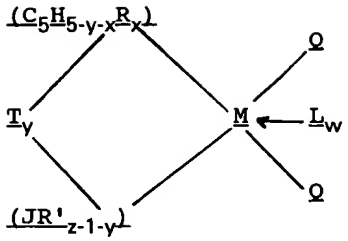
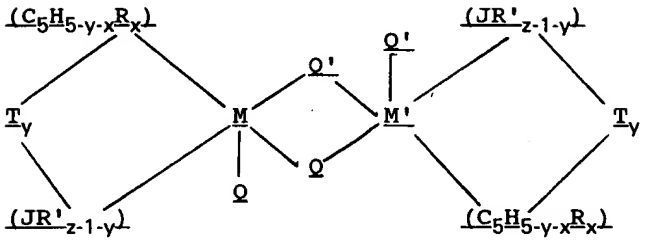


or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, x is 0, 1, 2, 3, 4 or 5 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, C_1-C_{20} hydrocarbyl-substituted metalloid radicals wherein the metalloid is selected from the Group IV A of the Periodic Table of Elements, and halogen radicals, or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand in which J is [The compound of claim 2 wherein the heteroatom ligand group J element is] nitrogen and R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20}

hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen radical, and z is 3;

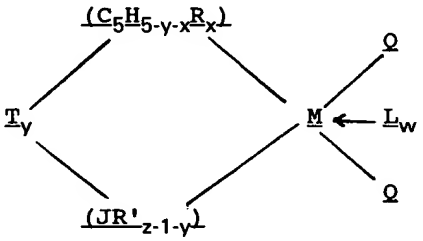
each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

Q' has the same meaning as Q;

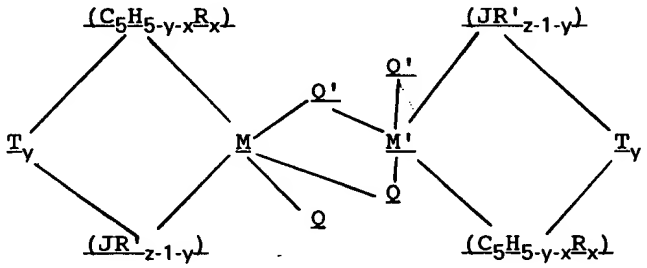
y is 0 or 1 when w is greater than 0; T is a covalent bridging group containing a Group IV-A or V-A element; and

L is a neutral Lewis base where w denotes the number 0 or 1, and when w is 0, y is 1.

5. (Amended) A compound having the general formula:



or



wherein M is [The compound of claim 25 wherein M is] Zr or Hf;

M' has the same meaning as M;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, x is 0, 1, 2, 3, 4 or 5 denoting the degree of substitution, and each

substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, C_1-C_{20} hydrocarbyl-substituted metalloid radicals wherein the metalloid is selected from the Group IV A of the Periodic Table of Elements, and halogen radicals, or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A or an element with a coordination number of two from Group VI-A of the Periodic Table of Elements, and each R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen radical, and z is the coordination number of the element J;

each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

Q' has the same meaning as Q;

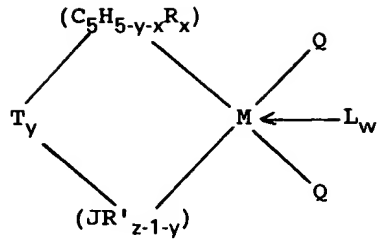
y is 0 or 1 when w is greater than 0; T is a covalent bridging group containing a Group IV-A or V-A element; and

L is a neutral Lewis base where w denotes the number 0 or 1, and when w is 0, y is 1.

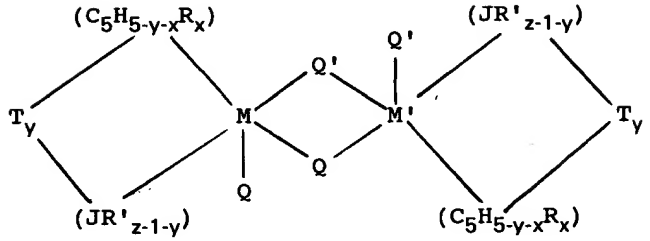
Please add the following claims 30-46.

-- 30. A compound having the general formula:

Do not enter claims 30-34. RL 3/24/04 canceled in 19/44



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, x is 0, 1, 2, 3, 4 or 5 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, and halogen radicals, or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A of the Periodic Table of Elements and R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen radical, and z is 3;

each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

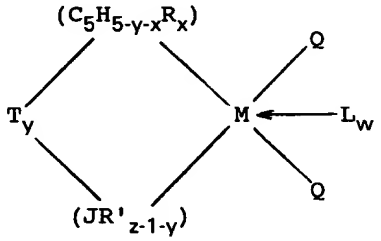
Q' has the same meaning as Q;

y is 0 or 1 when w is greater than 0;

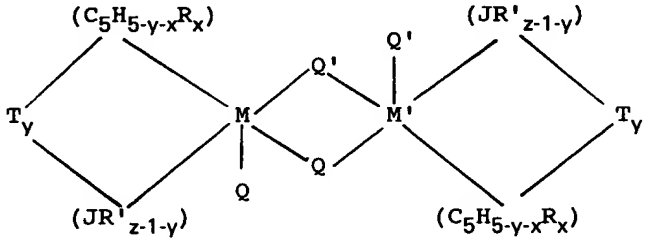
T is a covalent bridging group containing a Group IV-A or V-A element; and

L is a neutral Lewis base where w denotes the number 0 or 1, and when w is 0, y is 1. --

-- 31. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, x is 0, 1, 2, 3, 4 or 5 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted

C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, and halogen radicals, or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A or an element with a coordination number of two from Group VI-A of the Periodic Table of Elements and R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen radical, and z is the coordination number of the element J;

each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

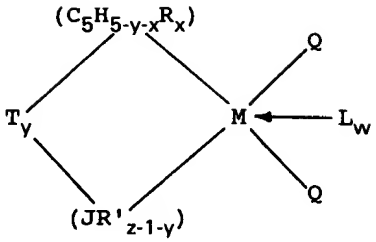
Q' has the same meaning as Q;

y is 0 or 1 when w is greater than 0;

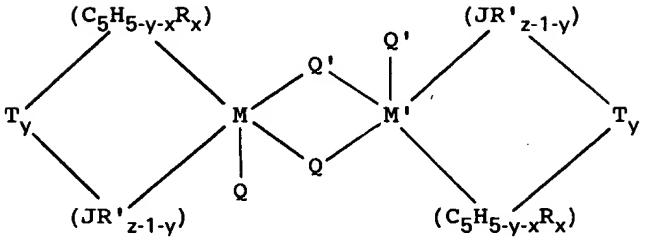
T is a covalent bridging group selected from the group consisting of dialkyl, alkylaryl or diaryl substituted silicon or germanium radicals; and

L is a neutral Lewis base where w denotes the number 0 or 1, and when w is 0, y is 1. --

-- 32. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, x is 0, 1, 2, 3, 4 or 5 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, and halogen radicals, or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A or an element with a coordination number of two from Group VI-A of the Periodic Table of Elements and R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is

replaced by a halogen radical, and z is the coordination number of the element J;

each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

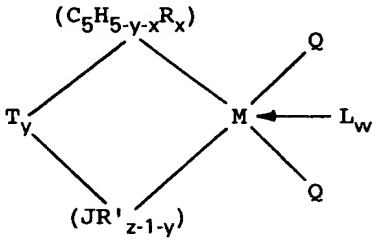
Q' has the same meaning as Q;

y is 0 or 1 when w is greater than 0;

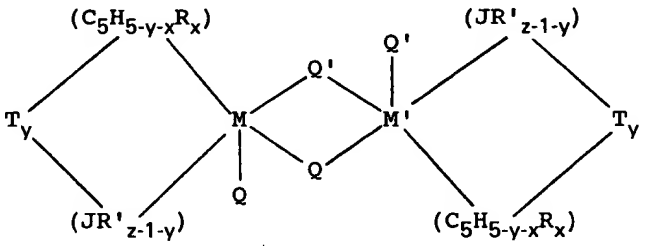
T is a covalent bridging group selected from the group consisting of substituted or unsubstituted methylene or ethylene radicals; and

L is a neutral Lewis base where w denotes the number 0 or 1, and when w is 0, y is 1. --

-- 33. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, x is 0,

1, 2, 3, 4 or 5 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of methyl, ethyl, propyl, butyl, octyl, benzyl, phenyl, trimethylgermyl, trimethylstannyl, triethylplumbyl, triflouromethyl, trimethylsilyl, triethylsilyl, ethyldimethylsilyl, methyldiethylsilyl, and triphenylgermyl, or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined to form a ring to give an indenyl or tetrahydroindenyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand selected from the group consisting of t-butylamido, phenylamido, p-n-butylphenylamido, cyclohexylamido, perfluorophenylamido, n-butylamido, methylamido, ethylamido, n-propylamido, isopropylamido, benzylamido, t-butylphosphido, ethylphosphido, phenylphosphido and cyclohexylphosphido, and z is 3;

each Q is, independently, selected from the group consisting of hydride, methyl, ethyl, propyl, butyl, amyl, hexyl, heptyl, octyl, nonyl, decyl, cetyl, phenyl, chloro, bromo, fluoro, iodo, methoxy, ethoxy, propoxy, butoxy, phenoxy, methylphenoxy, dimethylamido, diethylamido, methylethylamido, dibutylamido, dipropylamido, diphenylamido, diphenylphosphido, dicyclohexylphosphido, diethylphosphido, and dimethylphosphido;

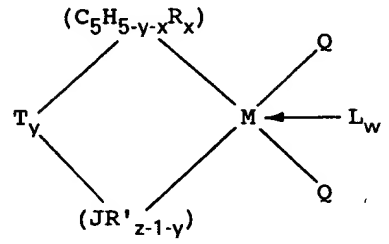
Q' has the same meaning as Q;

y is 0 or 1 when w is greater than 0;

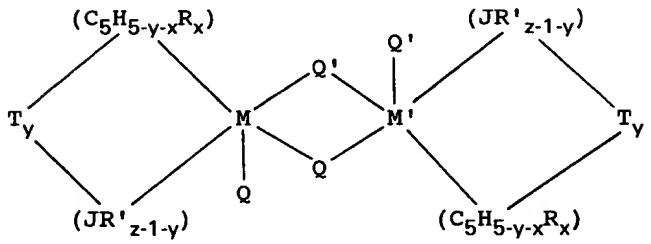
T is a covalent bridging group selected from the group consisting of dimethylsilyl, diethylsilyl, di-n-propylsilyl, diisopropylsilyl, di-n-butylsilyl, di-t-butylsilyl, di-n-hexylsilyl, methylphenylsilyl, ethylmethylsilyl, diphenylsilyl, n-hexylmethylsilyl, cyclopentamethylenesilyl, cyclotetramethylenesilyl, cyclotrimethylenesilyl, dimethylgermyl and diethylgermyl; and

L is a neutral Lewis base where w denotes the number 0 or 1, and when w is 0, y is 1. --

-- 34. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to five substituent groups R, x is 0, 1, 2, 3, 4 or 5 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of methyl, ethyl, propyl, butyl, octyl, benzyl, phenyl, trimethylgermyl, trimethylstannyl, triethylplumbyl, triflouromethyl, trimethylsilyl, triethylsilyl, ethyldimethylsilyl, methyldiethylsilyl, and triphenylgermyl, or $(C_5H_{5-y-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined to form a ring to give an indenyl or tetrahydroindenyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand selected from the group consisting of t-butylamido, phenylamido,

p-n-butylphenylamido, cyclohexylamido, perfluorophenylamido, n-butylamido, methylamido, ethylamido, n-propylamido, isopropylamido, benzylamido, t-butylphosphido, ethylphosphido, phenylphosphido and cyclohexylphosphido, and z is 3;

each Q is, independently, selected from the group consisting of hydride, methyl, ethyl, propyl, butyl, amyl, hexyl, heptyl, octyl, nonyl, decyl, cetyl, phenyl, chloro, bromo, fluoro, iodo, methoxy, ethoxy, propoxy, butoxy, phenoxy, methylphenoxy, dimethylamido, diethylamido, methylethylamido, dibutylamido, dipropylamido, diphenylamido, diphenylphosphido, dicyclohexylphosphido, diethylphosphido, and dimethylphosphido;

Q' has the same meaning as Q;

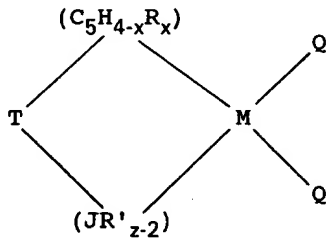
y is 0 or 1 when w is greater than 0;

T is a covalent bridging group selected from the group consisting of methylene, dimethylmethylene, diethylmethylene, ethylene, dimethylethylene, diethylethylene and dipropylethylene; and

L is a neutral Lewis base where w denotes the number 0 or 1, and when w is 0, y is 1. --

OK to enter claims 35-41 PA 3/24/04

-- 35. A compound represented by the general formula:



wherein M is Zr, Hf or Ti;

$(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to four substituent groups R, x is 0, 1, 2, 3 or 4 denoting the degree of substitution, and each

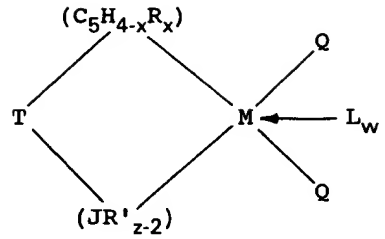
substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, and halogen radicals, or $(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-2}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A of the Periodic Table of Elements and R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen radical, and z is 3;

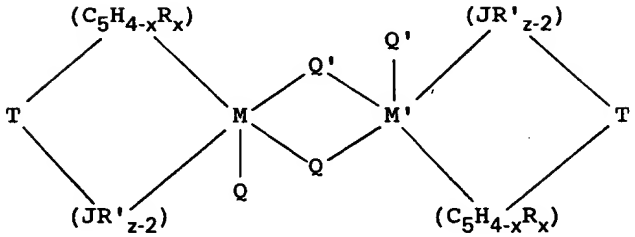
each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring; and

T is a covalent bridging group containing a Group IV-A or V-A element. --

-- 36. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to four substituent groups R, x is 0, 1, 2, 3 or 4 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, and halogen radicals, or $(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-2}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A or an element with a coordination number of two from Group VI-A of the Periodic Table of Elements and R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is

replaced by a halogen radical, and z is the coordination number of the element J;

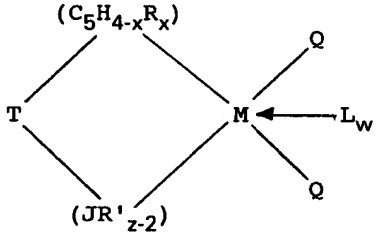
each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

Q' has the same meaning as Q;

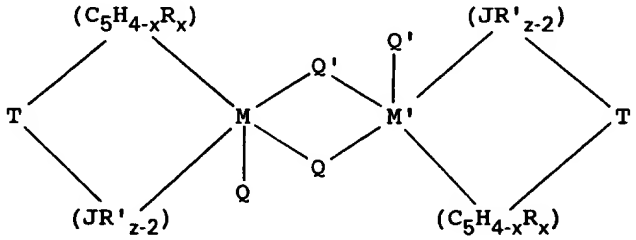
T is a covalent bridging group selected from the group consisting of dialkyl, alkylaryl or diaryl substituted silicon or germanium radicals; and

L is a neutral Lewis base where w denotes the number 0 or 1. --

-- 37. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to four substituent groups R, x is 0, 1, 2, 3 or 4 denoting the degree of substitution, and each

substituent group R is, independently, a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen atom, and halogen radicals, or $(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined forming a C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-2}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V-A or an element with a coordination number of two from Group VI-A of the Periodic Table of Elements and R' is a radical selected from the group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals where one or more hydrogen atoms is replaced by a halogen radical, and z is the coordination number of the element J;

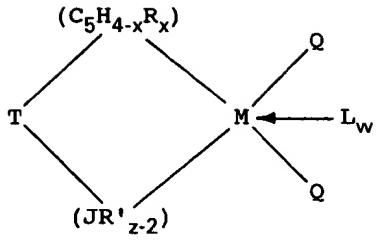
each Q is, independently, a univalent anionic ligand or two Q's together are a divalent anionic chelating ligand, provided that Q is not a substituted or unsubstituted cyclopentadienyl ring;

Q' has the same meaning as Q;

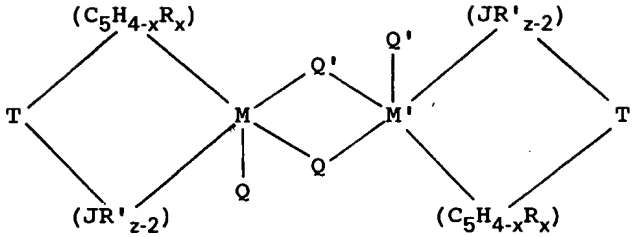
T is a covalent bridging group selected from the group consisting of substituted or unsubstituted methylene or ethylene radicals; and

L is a neutral Lewis base where w denotes the number 0 or 1. --

-- 38. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to four substituent groups R, x is 0, 1, 2, 3 or 4 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of methyl, ethyl, propyl, butyl, octyl, benzyl, phenyl, trimethylgermyl, trimethylstannyl, triethylplumbyl, triflouromethyl, trimethylsilyl, triethylsilyl, ethyldimethylsilyl, methyldiethylsilyl, and triphenylgermyl, or $(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined to form a ring to give an indenyl or tetrahydroindenyl ligand;

(JR'_{z-2}) is a heteroatom ligand selected from the group consisting of t-butylamido, phenylamido, p-n-butylphenylamido, cyclohexylamido, perfluorophenylamido, n-butylamido, methylamido, ethylamido, n-propylamido, isopropylamido, benzylamido, t-butylphosphido, ethylphosphido, phenylphosphido and cyclohexylphosphido, and z is 3;

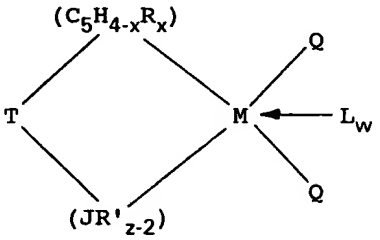
each Q is, independently, selected from the group consisting of hydride, methyl, ethyl, propyl, butyl, amyl, hexyl, heptyl, octyl, nonyl, decyl, cetyl, phenyl, chloro, bromo, fluoro, iodo, methoxy, ethoxy, propoxy, butoxy, phenoxy, methylphenoxy, dimethylamido, diethylamido, methylethylamido, dibutylamido, dipropylamido, diphenylamido, diphenylphosphido, dicyclohexylphosphido, diethylphosphido, and dimethylphosphido;

Q' has the same meaning as Q;

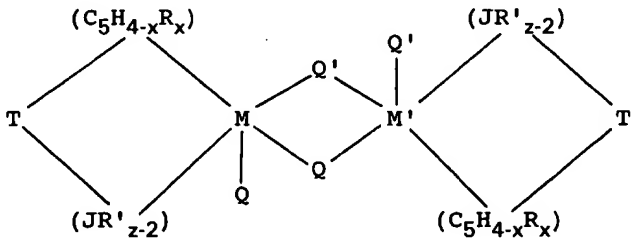
T is a covalent bridging group selected from the group consisting of dimethylsilyl, diethylsilyl, di-n-propylsilyl, diisopropylsilyl, di-n-butylsilyl, di-t-butylsilyl, di-n-hexylsilyl, methylphenylsilyl, ethylmethylsilyl, diphenylsilyl, n-hexylmethylsilyl, cyclopentamethylenesilyl, cyclotetramethylenesilyl, cyclotrimethylenesilyl, dimethylgermyl and diethylgermyl; and

L is a neutral Lewis base where w denotes the number 0 or 1. --

-- 39. A compound having the general formula:



or



wherein M is Zr, Hf or Ti;

M' has the same meaning as M;

$(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring which is substituted with from zero to four substituent groups R, x is 0, 1, 2, 3 or 4 denoting the degree of substitution, and each substituent group R is, independently, a radical selected from the group consisting of methyl, ethyl, propyl, butyl, octyl, benzyl, phenyl, trimethylgermyl, trimethylstannyl, triethylplumbyl, triflouromethyl, trimethylsilyl, triethylsilyl, ethyldimethylsilyl, methyldiethylsilyl, and triphenylgermyl, or $(C_5H_{4-x}R_x)$ is a cyclopentadienyl ring in which two adjacent R substituents are joined to form a ring to give an indenyl or tetrahydroindenyl ligand;

(JR'_{z-2}) is a heteroatom ligand selected from the group consisting of t-butylamido, phenylamido, p-n-butylphenylamido, cyclohexylamido, perfluorophenylamido, n-butylamido, methylamido, ethylamido, n-propylamido, isopropylamido, benzylamido, t-butylphosphido, ethylphosphido, phenylphosphido and cyclohexylphosphido, and z is 3;

each Q is, independently, selected from the group consisting of hydride, methyl, ethyl, propyl, butyl, amyl, hexyl, heptyl, octyl, nonyl, decyl, cetyl, phenyl, chloro, bromo, fluoro, iodo, methoxy, ethoxy, propoxy, butoxy, phenoxy, methylphenoxy, dimethylamido, diethylamido, methylethylamido, dibutylamido, dipropylamido, diphenylamido, diphenylphosphido, dicyclohexylphosphido, diethylphosphido, and dimethylphosphido;

Q' has the same meaning as Q;

T is a covalent bridging group selected from the group consisting of methylene, dimethylmethylene, diethylmethylene, ethylene, dimethylethylene, diethylethylene and dipropylethylene; and

L is a neutral Lewis base where w denotes the number 0 or 1. --

-- 40. Dimethylsilyl(tetramethylcyclopentadienyl) (tert-butylamido) M dichloride, where M is titanium, zirconium or hafnium. --

-- 41. Dimethylsilyl(tetramethylcyclopentadienyl) (tert-butylamido)zirconium dichloride. --

Do not enter claims 42-43. RR 3/24/04 — canceled in 19/M

-- 42. The compound of any of claims 30, 31 or 32 wherein each Q is independently selected from the group consisting of halogen, hydride or C_1-C_{20} hydrocarbyl. --

-- 43. The compound of claim 42 wherein each Q is independently selected from the group consisting of hydride, methyl, ethyl, propyl, butyl, amyl, hexyl, heptyl, octyl, nonyl, decyl, cetyl, phenyl, chloro, bromo, fluoro and iodo. --

Ok to enter claims 44-45. RR 3/24/04

-- 44. The compound of any of claims 35, 36 or 37 wherein each Q is independently selected from the group consisting of halogen, hydride or C_1-C_{20} hydrocarbyl. --

-- 45. The compound of claim 44 wherein each Q is independently selected from the group consisting of hydride, methyl, ethyl, propyl, butyl, amyl, hexyl, heptyl, octyl, nonyl, decyl, cetyl, phenyl, chloro, bromo, fluoro and iodo. --

REMARKS

This application is currently involved in Interference No. 102,953 declared July 20, 1992.